

Figure 1.

## Single Molecule Electrophoresis

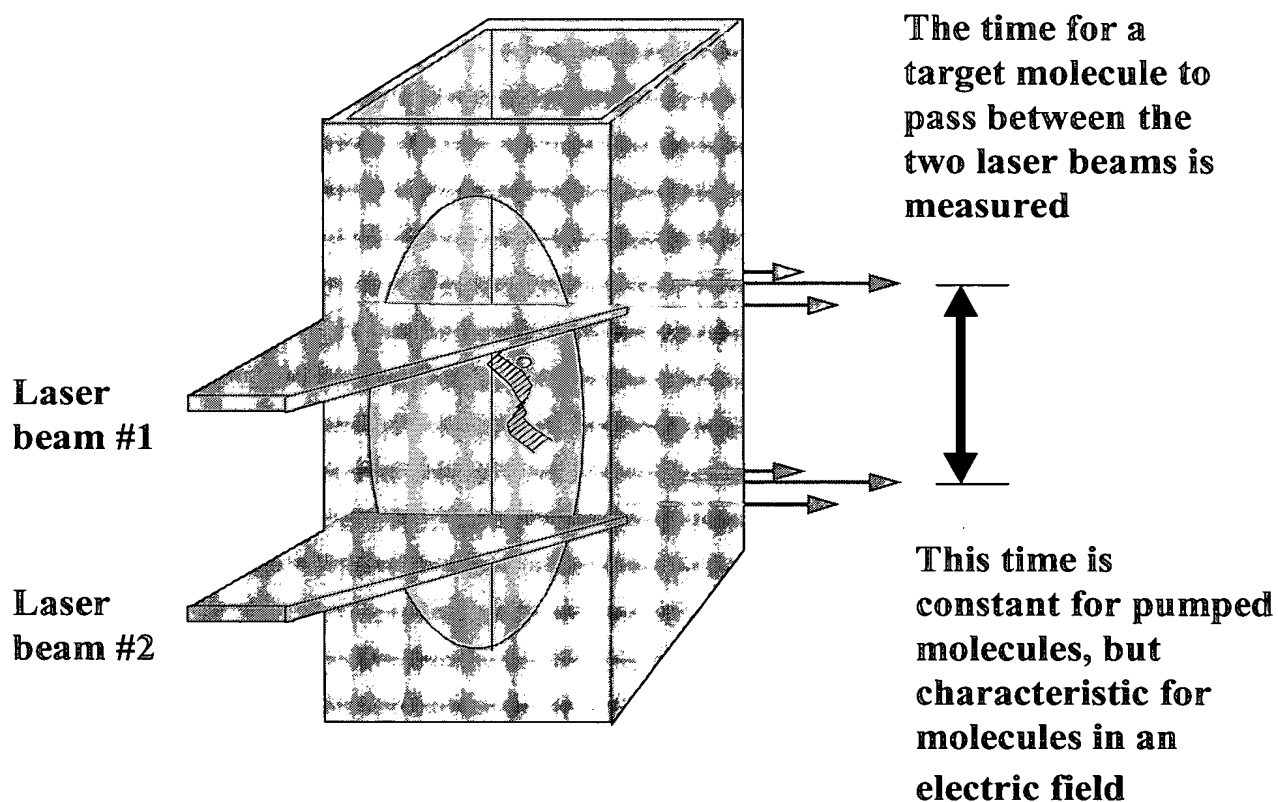


Figure 2.

## Target Detection via *Velocity* Measurement:

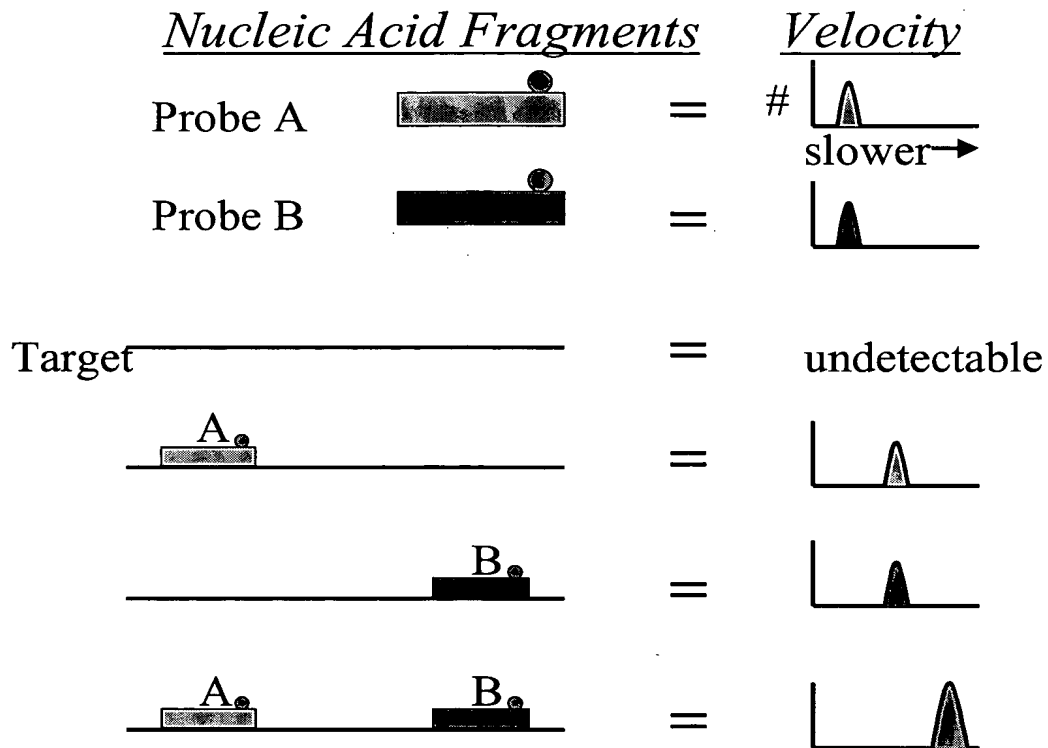


Figure 3.

# Multiplex Target Detection - *Velocity* & Intensity

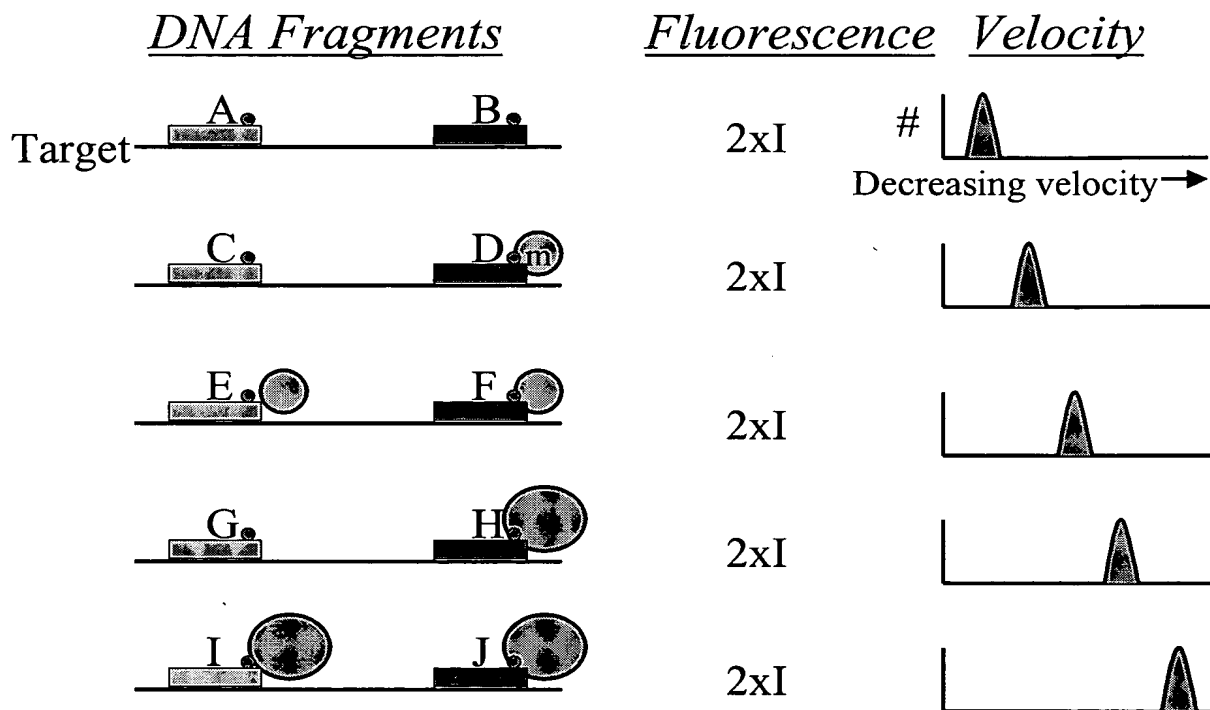


Figure 4.

# Multiplex Target Detection - *Velocity* & Intensity

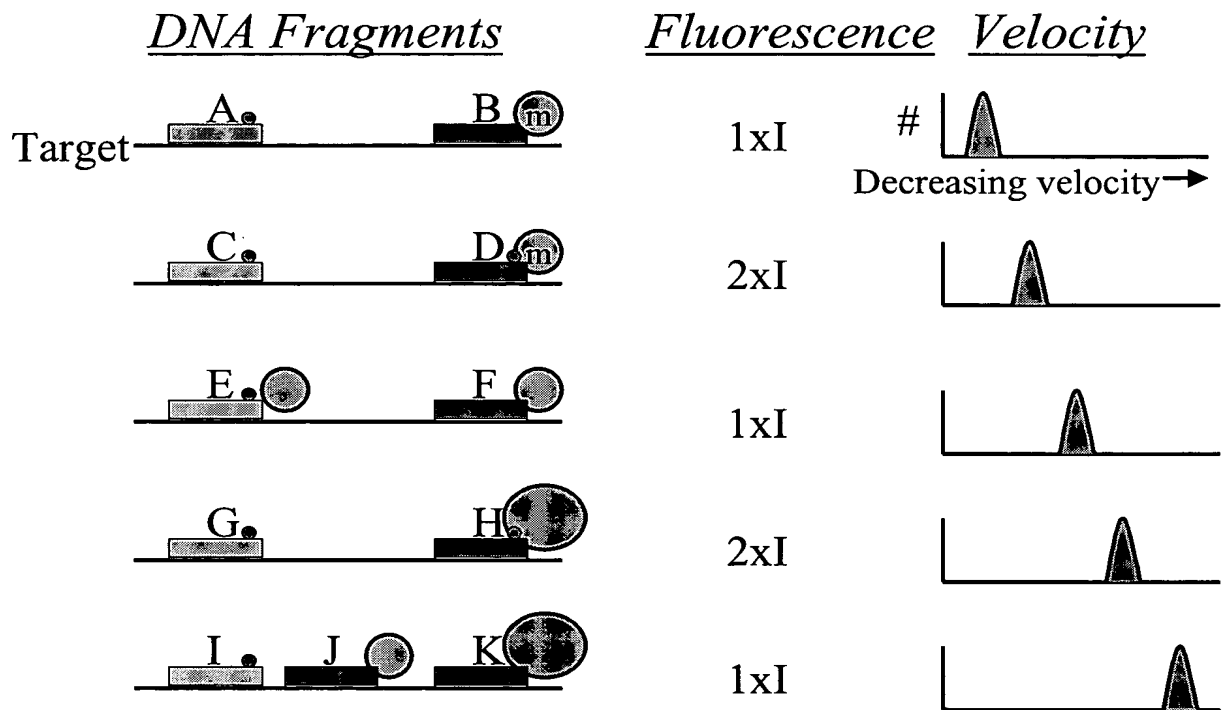
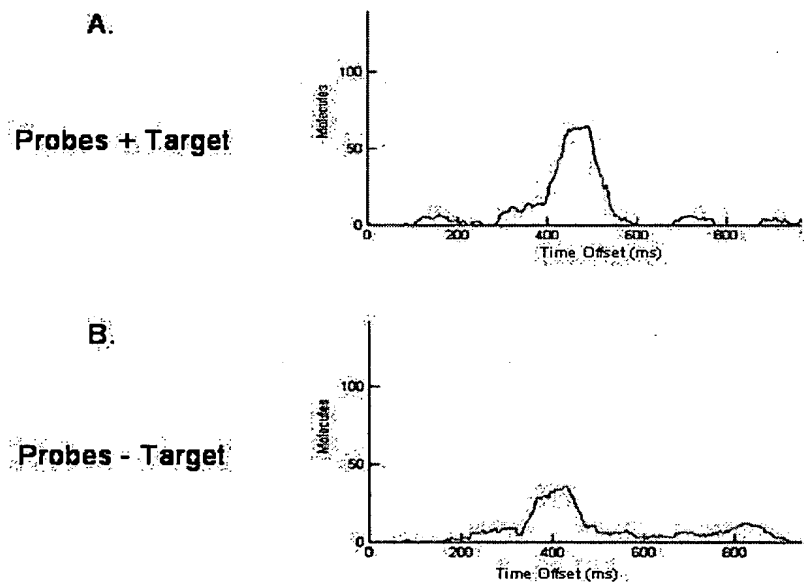


Figure 6. Hybridization with modified mobility (CM) probe

Figure 6.



# Single Molecule Detector

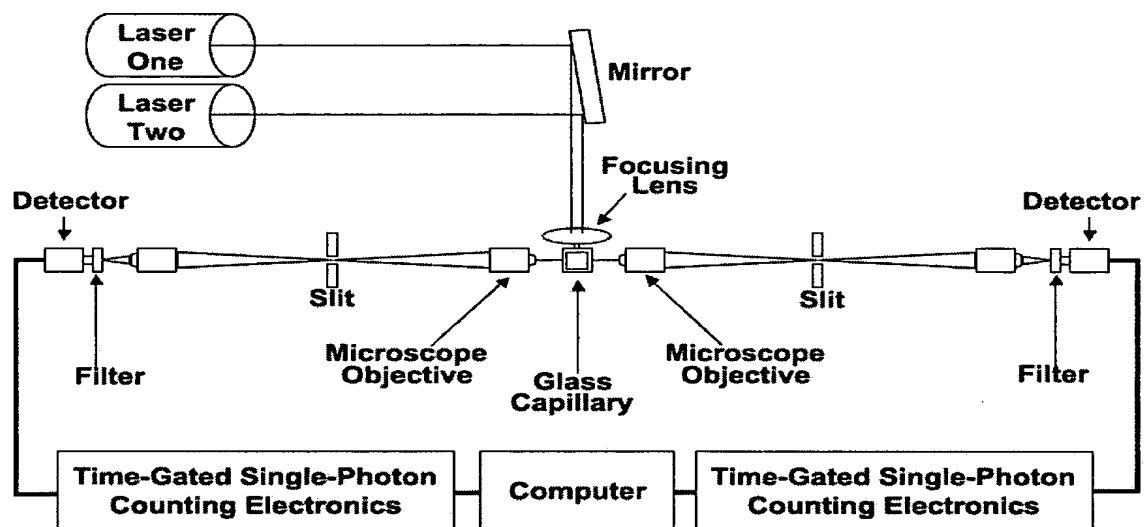


Figure 1 Schematic diagram of the basic apparatus for single molecule detection using laser induced fluorescence.

## Heart of the SMD Instrument

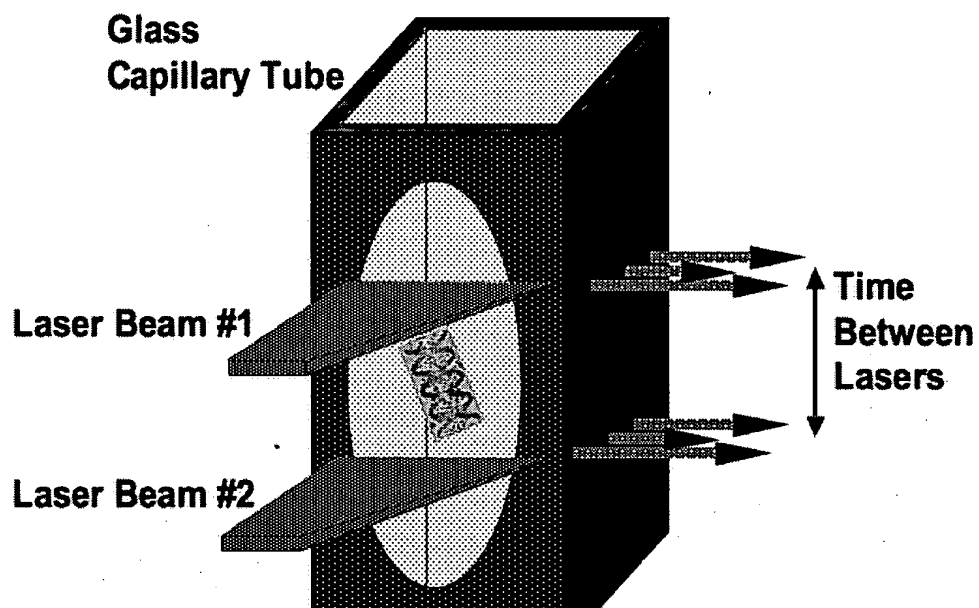


Figure 2. Glass capillary tube forms the heart of the system.

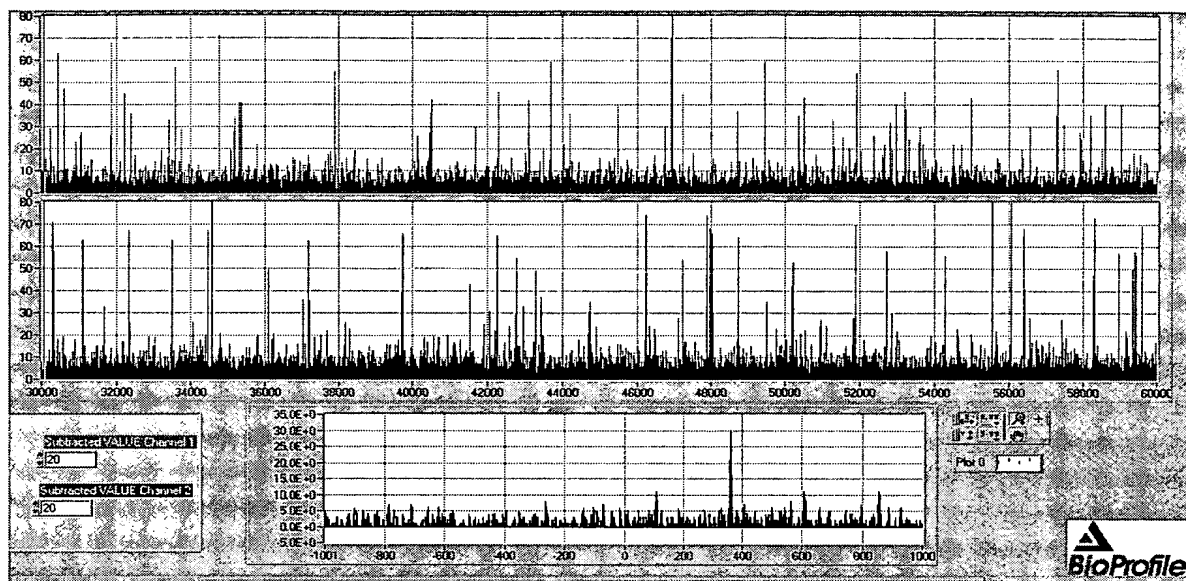


Figure 3. Example of output from existing laboratory device. The upper two traces show the number of photons as a function of time (each unit represents 2 ms) for the two channels. Each large spike represents a fluorescence detection event over the background levels. The bottom trace represents the cross-correlation of the events for channel one with the events for channel two over a 30 sec period with a single peak at 700 msec